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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/540,026
Filing Date: January 25, 2006
Appellant(s): SUGG, BERTRAM

Mr. Ronald E. Greigg
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 19 October 2009 appealing from the Office action mailed 23 April 2009.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

No evidence is relied upon by the examiner in the rejection of the claims under appeal.

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 9-10, 13-14 and 29-32 are rejected under 35 U.S.C. 102(b) as being anticipated by Schreiner (PG Pub 20020175591).

Considering claim 9, Schreiner teaches (Figures 1 + 3) a piezoelectric actuator (1), having a multi-layered construction of piezoelectric layers (2) interleaved with inner electrodes (11) and having an alternating contacting of the inner electrodes the outer electrodes (18) the regions between the outer electrodes being provide with an insulation layer (17) comprises of the same ceramic material as the piezoelectric layers thus having the same properties as the piezoelectric layers themselves and the insulating layer being applied to the outer surface of the piezoelectric actuator (abstract + paragraph 0006). The method of making of applying the insulating layers to the outer surface of the piezoelectric actuator in the green state, before sintering, is not germane to the

issue of patentability. Therefore, this limitation has not been given patentable weight. Furthermore, the end of claim 1 appears to indicate a product-by-process limitation. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. Since Schreiner teaches the final product it is still relevant art and does meet the limitation.

Considering claim 10, Schreiner teaches the insulating layer encloses the edges of the piezoelectric actuator (paragraph 0006 + 0023).

Considering claim 13, Schreiner teaches the outer electrodes are attached to regions of the insulating material that have been uncovered by grinding (paragraph 0006).

Considering claim 14, Schreiner teaches the outer electrodes are attached to regions of the insulating material that have been uncovered by grinding (paragraph 0006).

Considering claim 29, Schreiner (Figure 3) teaches providing a piezoelectric stack (16) having alternating layers of the piezoelectric material (2) and inner electrodes (11) and a coating on the outside of the piezoelectric stack with a layer of material (17).

The method of coating the outside of the piezoelectric stack with a layer of material which is the same material as the piezoelectric layers, prior to sintering

is not germane to the issue of patentability. Therefore, this limitation has been given no patentable weight. Furthermore, the end of claim 29 appears to indicate a product-by-process limitation. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. Since Schreiner teaches the final product it is still relevant art and does meet the limitation.

Considering claim 30, Schreiner teaches the piezoelectric stack is coated with the same material as is used as the piezoelectric material (well known that sintering is used to sinter ceramic objects and the piezoelectric material is made from a ceramic material). It would be inherent that the sintered skin or insulation layer would become hard, smooth and impervious since the insulation layer is made from a ceramic material which when it cools becomes hard and as it surrounds the piezoelectric stack it would provide protection from the outside (impervious) and smooth. It has been held that where the structure recited in a reference is the same as the claimed structure, claimed properties and functions are presumed to be inherent (*In re Best,* 195 USPQ 430, 433). Therefore, since the structure of Schreiner is the same as the applicant's claims the limitations of the insulation layer becoming hard, smooth and impervious are inherent.

Considering claim 31, Schreiner teaches after the piezoelectric stack is sintered and the coating layer is hardened, removing portions of the sintered coating (paragraph 0023).

Considering claim 32, Schreiner (Figure 1) teaches adding outer electrodes (18) to the area which has had the coating removed in a manner such that the outer electrodes make appropriate contact with the inner electrodes (paragraph 0023, obvious that one would want to connect outer and inner electrodes together so the device will operate). It is inherent that the inner and outer electrodes would not be connected until portions of the sintered coating have been removed since there would be no way to connect the electrodes if the insulation layer was in between the electrodes.

(10) Response to Argument

Regarding the argument that Schreiner has no indication that an additional insulating layer is applied to the stack while the piezoelectric stack is in its green state, before sintering the examiner refers back to claim 1. The method of making of applying the insulating layers to the outer surface of the piezoelectric actuator in the green state, before sintering, is not germane to the issue of patentability. Therefore, this limitation has not been given patentable weight. Furthermore, the end of claim 1 appears to indicate a product-by-process limitation. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same or obvious from a product of

the prior art, the claim is unpatentable even though the prior product was made by a different process. Since Schreiner teaches the final product it is still relevant art and does meet the limitation.

Regarding the argument that there is not insulation layer covering the internal electrodes the examiner points paragraph 0023 lines 1-5 which states "A multilayer actuator 16 that has been manufactured according to the process according to the invention is shown in a schematic, much enlarged representation in Fig. 3. It has a circular cross-section 12 and is fully coated by a sinter skin 17". To the examiner that meets the limitation of claim 9 wherein "an alternating contacting of inner electrodes with outer electrodes, the regions between the outer electrodes being provided with an insulation layer".

Regarding the argument that Schreiner does not teach the limitations of claim 29 the examiner again refers to the product-by-process argument. Although the layer made is added during the sintering process Schreiner does teach the final structure and therefore meets the limitation of the appellant claim.

Regarding the argument that Schreiner does not teach an insulation layer that covers the edges of the inner electrodes the appellant never claims the insulation layer covers the edges of the inner electrodes. As stated above in paragraph 0023 of Schreiner it meets the appellant's limitation by teaching the multilayered actuator 16 is fully coated by a sinter skin 17. Therefore the appellant's argument is moot.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Bryan P Gordon/

Examiner, Art Unit 2834

Conferees:

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T-QAS TC 2800

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